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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SMITH, JEFFREY S

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/502,089

Applicant(s)

LI ET AL.

Examiner

Jeffrey S. Smith

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Requirement For Information

1. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

In response to this requirement, please state whether any search of prior art was performed. If a search was performed, please state the citation for each prior art collection searched. If any art retrieved from the search was considered material to demonstrating the knowledge of a person having ordinary skill in the art to the disclosed image reproducing apparatus and image reproducing method, please provide the citation for each piece of art considered and a copy of the art. For example, please provide a copy of each reference listed in the Search Report. Also, please provide a copy of each reference listed in the application.

For each piece of cited art that is written in a foreign language, please identify the portion of the art that was considered material as well as a concise explanation in the English language of the material portion.

In response to this requirement, please state whether any rejection was made in a corresponding foreign application. If a rejection was made in a corresponding foreign application, please provide a copy of the rejection. For example, if a corresponding application has been filed in Europe and has received a rejection, please submit a copy of the rejection. If the Japanese Patent Office issued a rejection in a corresponding Japanese application, please submit a copy of the Japanese rejection.

This information is relevant to patentability. Applicant is reminded that failure to fully reply to this requirement for information will result in a holding of abandonment. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Information Disclosure Statement

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining

compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

4. The information disclosure statement filed July 22, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the details of claim 1. Any detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

Figure 1 is a minimalist drawing of the elements of claim 1. For example, instead of showing the functions performed by the conditional majority filter, the figure merely has the words "conditional majority filter" inside of a box. The same is true for the other elements of the claim such as the ranking pixels, the conditional majority filter as well as

its use, the generating of the masks, and the creation of the mosaic as described in the specification. The figure needs to be revised to adequately show the features claim 1.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Clearly, the elements of claims 2 through 15 are entirely absent from the drawing. **Therefore, the features specified in claims 2 through 15 must be shown or the feature(s) canceled from the claim(s).** No new matter will be entered.

7. **Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.** Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. **The objection to the drawings will not be held in abeyance.**

Specification

8. The disclosure is objected to because of the following informalities.

The specification has numerous clerical errors which should be revised. For example, in paragraph 4, "confuse bright land surfaces" should be "confuses bright land surfaces"; in paragraph 5, "is permitted to participate" should be "to participate", and in paragraph 7, "in a predetermined gray levels" should be "in predetermined gray levels". Also, the letters and subscripts in the equations of paragraph 41 need to be identified. These examples are provided as a courtesy to applicant. The rest of the application has similar errors which need correction. Applicant must proofread the application in order to correct the errors.

Appropriate correction is required.

9. Claims 1-15 objected to because of the following informalities. In claim 1 shallowness should be shadowiness. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The detailed description fails to describe the subject matter of claims 1-15 in such a way as to enable one skilled in the art to make or use the invention. The summary of the invention contains the language of claims 1-15. However, merely repeating the claim language in the summary fails to enable one of ordinary skill in the art to make or use the claimed invention. For example, the disclosure fails to provide adequate support for the conditional majority filter of claim 1. The specification in paragraph 41 merely says that "A conditional majority filter is applied to provide this." The other claims are similarly not enabled by the detailed description.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The "computer useable medium" should be "computer readable medium," and the term "having a computer program code" should be "storing a computer executable program code."

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2624

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by the consideration of prior art in paragraphs 5 through 32 of the disclosure.

For claim 1, the admitted prior art discloses a method for generating a cloud free and cloud-shadow free image from a plurality of images of a region, the method including the steps of: (a) ranking pixels in order of cloudiness and shallowness (paragraph 17); (b) using a conditional majority filter on the plurality of images of the region to include as large a patch of neighbouring good pixels from each of the plurality of images as possible (paragraph 18); (c) generating cloud and shadow masks by classifying a group of pixels as cloud, shadow, or noncloud-nonshadow (paragraphs 5, 18 and 20); and (d) creating a mosaic from the plurality of images to form the cloud free and cloud-shadow free image (paragraphs 18-20).

For claim 2, the admitted prior art discloses each pixel in each of the images is ranked according to predefined ranking criteria, and the highest ranked pixels are used to compose the mosaic (paragraph 17). For claim 3, the admitted prior art discloses size and shape information of bright pixel clusters are used to discriminate any bright land surfaces and buildings from clouds (paragraphs 15-16). For claim 4, the admitted prior art discloses solar illumination direction, sensor viewing direction and typical cloud heights information is used to predict likely locations of cloud shadows (paragraph 12).

For claim 5, the admitted prior art discloses that intensity gradients are used to search for locations of cloud shadows near cloud edges (paragraph 15). For claim 6,

Art Unit: 2624

the admitted prior art discloses applying a morphological filter to the cloud masks detected by the intensity gradients to locate and include thin clouds around the edges of thick clouds (paragraphs 5 and 10). For claim 7, the admitted prior art discloses the plurality of images is panchromatic satellite images (paragraphs 5-10 and 14).

For claim 8, the admitted prior art discloses the plurality of images is multi-spectral images (paragraph 11). For claim 9, the admitted prior art discloses the highest ranking pixels are considered as good pixels and the lowest ranking pixels are considered as bad pixels (paragraph 16). For claim 10, the admitted prior art discloses the good pixels are further classified into vegetation pixels and building pixels (paragraph 15).

For claim 11, the admitted prior art discloses the building pixels include land clearings (paragraph 15). For claim 12, the admitted prior art discloses the classification depends on whether the pixel intensity is below or above a threshold for vegetation pixels (paragraph 15). For claim 13, the admitted prior art discloses darker good pixels are preferred over brighter good pixels (paragraph 16). For claim 14, the admitted prior art discloses a cloud free and cloud-shadow free image produced by the method of any one of claim 1 (paragraphs 5-6).

For claim 15, the methods described in the admitted prior art are performed using a computer usable medium having a computer program code which is configured to cause a processor to execute one or more steps to enable a computer to perform the method of claim 1.

Art Unit: 2624

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Smith whose telephone number is 571 270-1235. The examiner can normally be reached on M-F. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSS
April 13, 2007


JINGGE WU
SUPERVISORY PATENT EXAMINER